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METRIC SYSTEM

This Fisheries Bulletin, an FAO publication, uses the metric system of units to measure quantities in terms of weight, volume, capacity, length, and area. "Tons" and "quintals", when not specified by a descriptive adjective, therefore mean "metric tons" (1,000 kilograms) and "metric quintals" (100 kilograms), respectively.

In the case of monetary values, the currency units are defined by the adjective but unless otherwise specified the term "dollars" refers to U.S.A. dollars

CONVERSION FACTORS

(a) General: Non-metric units to metric units:

Converted from	To:	Multiplier
Pounds	Metric tons	0.0004536
Hundredweight (112 pounds)	" "	0.0508
Hundredweight (100 pounds)	" "	0.04536
Quintal (112 pounds)	" "	0.0508
Short ton (2,000 pounds)	" "	0.9072
Long ton (2,240 pounds)	" "	1.0161
U.S.gallons	Liters	3.7853
Imperial gallons	"	4.546

(b) Fisheries Products: Capacity and numbers to metric weight units:

Converted from:	To:	Multiplier
Hectoliter (herring)	Metric tons	0.093

(c) Fisheries Products: "Yield" factors:

Converted from:	To:	Multiplier
Wet-salted cod and allied species	Dried basis	0.66

SYMBOLS USED IN TABLES

... Not available ϕ Negligible - Nil

Fisheries Bulletin

Volume II, Number 2 March - April 1949

PREFACE

The March-April issue of the FAO Fisheries Bulletin gives textual and tabular summaries of end-of-year reports for 1948 received up to 7 March 1949. Recent trade statistics are also given for a number of countries. Tables 21 to 28 are intended as supplements to the trade section of the FAO Yearbook of Fisheries Statistics - 1947.

Human consumption of fish is dealt with in Tables 13 to 20, which review statistics brought together from various publications. As part of the comments on the tables, suggestions are made with a view to improving research in this field, with particular emphasis on the need for comparable figures.

The listing of recent technological publications, which appeared in the FAO Fisheries Bulletin, Vol. I, Nos. 2 and 3), is continued in this issue. Copies of reference material desired should be obtained directly from the publisher.

COMPUTING HUMAN CONSUMPTION OF FISH

Figures on quantitive fish consumption in various countries have been compiled and published from time to time. However, valuable as they are, many of these statistics give only a rough estimate of the per caput fish consumption of the total population of a country and they are often published without any indication of the weight basis, the conversion methods employed in their computation, or the period concerned. It is therefore often difficult, and sometimes impossible, to use them in comparative studies. Their value would be greatly increased if the data for one country could be compared with those for another or with earlier published estimates for the same area. However, this comparability can be achieved only when there is agreement upon the basic concepts, as well as upon the computative methods used.

The main purpose of these notes is to tabulate and compare some available consumption figures and to encourage the use of more uniform methods and more clearly defined concepts in future work on fish consumption statistics. Even when the lack of data prevents the statisticians from following these suggestions for improving their calculations, the mere awareness of possible sources will still ensure greater accuracy and comparability of the final results. It is to be hoped that workers in this field will in the future specify more definitely the methods and concepts used, so that all possible flaws can be taken into consideration when figures from various sources are brought together in a comparative study.

TABULATION OF FISH CONSUMPTION

In the accompanying tables (Tables 13 to 20) an attempt has been made to tabulate, as concisely and conveniently as possible, data on the per caput consumption of fish for the countries on which information is available.

In May 1948, the Canadian Department of Fisheries, Ottawa, published a study, entitled Fish Consumption in Canada, a statistical report for 1945, 1946, and 1947. The tables on Canadian fish consumption (18 and 19) in this FAO publication indicate the methods that can be followed when computing the per caput and total fish consumption of a given country. Attention should be drawn to the procedure in the Canadian Study for computing "total" consumption on the product-weight basis of the aggregate of the various species of fish and the main commodity forms and to that for computing the per caput average on the "edible-weight" basis, the quantities of each commodity type being reduced to this basis by the appropriate conversion factors

Although the consumption figures for most other countries are computed on bases which leave much to be desired, they give a reasonably approximate indication of the degree of difference in the average level of fish consumption in the various countries.

Consumption figures are available for about 80 countries with a total estimated population of about 1,838 millions, roughly 80 per cent of the world population.

If consumption figures are compared on an edible-weight basis, it is found that any figure for which the weight basis is not stated might contain an error of

150 per cent, unless it is converted with the usual conversion factor from the fresh-fillet weight to the round-fresh weight. Comparison is also difficult because of widely divergent figures in the per caput consumption for some countries as reported by the different authorities. Bearing in mind these differences and the possibilities of flaws in the original data, an attempt has been made to group the countries of the world into four categories on the basis of the edible weight of the fish consumed per caput by the total population of the area during the normal year.

(a) Very low consumption countries (less than 5 kg. per caput)

Austria, Bulgaria, Czechoslovakia, Hungary, Ireland, Poland, Rumania, Switzerland, Yugoslavia
India, China, Java and Madura, Turkey
British Honduras, Costa Rica, Guatemala, Honduras, Mexico, Nicaragua, Panama, Salvador
Bahamas, Cuba, Dominican Republic, Haiti
Argentina, Bolivia, Brazil, Colombia, Ecuador, Paraguay, Peru, Uruguay
Algeria, Egypt, French Morocco, Kenya and Uganda, Madagascar, Tanganyika, Tunisia, Union of South Africa

(b) Intermediate consumption countries (5.0 - 9.9 kg. per caput)

Finland, France, Greece, Italy, Luxembourg
Australia, Ceylon, New Zealand
Canada, United States of America
Windward Islands
Chile, Surinam, Venezuela
Gold Coast

(c) High consumption countries (10.0 - 19.9 kg. per caput)

Belgium, Denmark, Germany, Netherlands, Portugal, Spain, United Kingdom
Korea, Siam, Indo-China, Malaya
Barbados, Bermuda, British West Indies, French West Indies, Jamaica (and the Caymans), Leeward Islands, Netherlands West Indies, Puerto Rico, Virgin Islands
British Guiana, French Guiana

(d) Very high consumption countries (20.0 kg. or more per caput)

Iceland, Norway, Sweden
Burma, Japan, Philippines, Ryukyu Islands.

CONSUMPTION BY CONTINENTS

In Europe, the exact pattern of the per caput fish consumption will in reality differ to some extent from the tabular picture because of the great regional variations within each country. However, it appears that the high consumption areas are in northwestern Europe - Sweden, Norway, Iceland, United Kingdom, Belgium, Netherlands, Germany, and Denmark. The Iberian peninsular countries, Spain and Portugal, are the only ones in a Roman Catholic area of southern Europe with a high fish consumption. Central and southwestern Europe have an intermediate level of consumption. Eastern Europe has a very low level of per caput consumption of fish. It is, however, to be noted that a large part of this area is inland and that the few countries having access to the sea exploit fishing grounds that are not of great importance. Ireland, though it has a predominantly Roman Catholic population and is in northwestern Europe, has a surprisingly low per caput consumption. It is evident that the general European

distribution pattern does not give a basis to the commonly stated concept that religious practices help to ensure a high per caput fish consumption.

In North America fish consumption is intermediate in Canada, slightly lower in the United States, and extremely low in the Central American countries. It reaches a high level in the Caribbean islands, but is very low in South America, except in Venezuela and the adjacent European possessions of British Guiana, Surinam, and French Guiana - areas bordering on the Caribbean, where per caput consumption is high.

The data for the rest of the world is very fragmentary, and comprehensive over-all pictures of consumption on the Continents of Africa and Asia cannot be pieced together. As far as Africa is concerned, the scanty information available indicates that fish is consumed to some degree all along the coast of West Africa bordering on the Atlantic Ocean, that of North Africa on the Mediterranean Sea, the part of northeastern Africa on the Red Sea, and among the tribes on the great lakes and sea coast of East Africa. However, the per caput figures for these areas might be low.

In the Union of South Africa, the per caput consumption for the total population is very low, but this total includes large numbers of the African Bantu population living on reserves who are still inclined to reject fish as a food. The fish consumption of the European, Asian, and mixed population in South Africa is high, especially in the southwestern area of the Province of the Cape of Good Hope.

On the continent of Asia, comparatively high fish consumption might be expected in those areas with desert hinterlands and productive sea fisheries, i.e., regions such as Arabia and the Near East. While consumption tends to be high in Burma and the Malayan Peninsula, it appears to be low in India and Pakistan.

In Australia and New Zealand, whose population is nearly exclusively of European origin, fish consumption is not high, but a very high consumption is reached in the Philippines and in Japan.

DEFINITIONS OF BASIC CONCEPTS

Consumption

The term consumption requires a very careful and clear definition. The economist, as apart from the nutritionist, considers a commodity to have passed through all the stages of production and to enter into consumption at the moment the final consumer requires it. "Consumption" is often used not only to refer to the use of commodities for the purpose of food for human beings, but also to their agricultural use as feedingstuff for animals or their industrial use as auxiliary material for production in mechanical industries. Therefore, when the term "the consumption of fish and fisheries products (aquatic animal or plant products)" is used, it is necessary to specify clearly whether it refers to (a) "human consumption of fish as food," (b) "the industrial or agricultural consumption (utilization)," or (c) "total consumption," which includes both (a) and (b).

"Consumption" is a term also used by nutritionists, who, when wishing to measure the physiological contribution of fish to the dietary levels of consumers, are interested in the amounts actually ingested. These quantities, as arrived at by the nutritionist, correspond approximately to the "fillet weight" or "edible weight" of the fish.

Specification of Commodity Forms

From the marine, the estuarine, and the fresh-water fisheries, from rivers, ponds, and lakes, a great variety of species of aquatic animal and plant life are landed. After these have been caught, they undergo dressing and further processing. The differences in the dressing and processing result finally in a great multitude of end-products. When a study is undertaken of the consumption of aquatic animal and plant life, the analyst must specify very clearly which of these end-products are the commodity forms he is either including or excluding for the purposes of the study.

"Dressing" is any process of preparing, handling, or treating the aquatic animal or plant as obtained from the waters of the fishery, separating or parting (tearing, cutting, slicing) sections (heads, fins, tails, skins, viscera, entrails, liver, roe, gills, claws, shells, legs, etc.) from the body. Dressed products include the following forms: drawn, gutted, eviscerated, headed, gibbed, pan-dressed or filleted fish; fish cutlets; steaks, flaked, sliced, skinned, split, boned fish; peeled, shucked or shelled crustaceans and molluscs, etc.

"Processing" is a secondary technical treatment applied to any aquatic animal or plant or parts of such forms, whether dressed or not, to preserve the products against deterioration or to enhance the flavor, palatability, digestibility, color, etc., of the product.

Processed products include the following groups of forms: frozen, brine-frozen, cooked, dried, hard-dried, salted, wet-salted, or brine-salted fish; fish pickled in brine, salted and dried, cured, smoked, kippered, marinated, fermented, canned, or bottled, etc.

"Reduction" is a manufacturing process applied to fish and other aquatic animal and plant raw materials to convert them into edible or inedible oil, fish meal, and other by-products.

When naming the species of aquatic animal and plant life, care should be taken in indicating to what extent the word "fish" refers to teleostean, ganoid, or elasmobranch fish and to what extent crustaceans and molluscs are included or excluded. Attention should also be given to the inclusion and exclusion of aquatic mammalian products, other aquatic fauna (turtles, frogs, bêche-de-mer), aquatic animal residuals (pearls, mother-of-pearl, shells, sponges, coral, etc.), aquatic flora (algae and mosses, seaweed, and moss, and derived products such as agar-agar), etc.

Weight Basis

A most vital feature to be considered is the clear specification of the weight basis in terms of which the computations are made. It should be noticed that the various species, after being dressed or processed, have the weight reduced or increased. The degrees of dressing result in discarding several portions of the aquatic animal or plants, while the processing methods change the chemical and physical composition and nature of the commodity. Therefore, the end-product will differ in weight from the original quantity as caught and removed from the water.

To compute the total quantity of all fisheries products that go into consumption, i.e., pass into the hands of the final consumer, a mere aggregation of the weights of the various quantities of commodity forms will be sufficient. However, when comparing such a figure with those of other time periods or areas, it is not sufficient to have computations on such a simple aggregation basis.

Any appreciable difference in the composition of consumable supplies on the basis of the degree of dressing or processing, between the periods or areas compared,

will not permit a true comparison. Should the quantity for one country consist largely of filleted fish and canned fish, the per caput figure cannot be compared with the consumption of another area where the fish reach the consumer in the round, fresh weight, unprocessed condition.

For such comparison, consumable supplies have to be broken down according to the species, degree of dressing, and kind of processing and then must be converted to a common basis. Examples of such bases are: (1) the round, fresh-weight basis, i.e. round, unprocessed, as caught and taken from the waters and (2) the edible basis, i.e., the filleted weight. Where the final dressed and processed commodity form is 100 per cent edible, the weight on an edible basis will naturally be the same as the end-product or commodity weight. When the consumer buys products still containing inedible parts, such as round or only eviscerated or gutted fish, the final product weight has to be reduced by means of appropriate conversion factors to determine the actual edible weight. Where domestic products or imports and exports are recorded in terms of their weights as landed or as exported or imported, conversion factors have to be used to convert them to the (1) ex-water or (2) edible basis. When studying special commodity forms, such as salted fish, it may not be necessary to choose the weight basis from only the two bases just specified; provided the basis for all quantities used in the computation is the same and the basis is clearly specified, any form basis can be chosen.

It will also be necessary to bear in mind that the weight of some products will be reported as net and others as gross, i.e., weights of some commodities include the weight of the packing material and containers while these are excluded in the case of other products. In this brief account details cannot be given of all the differences that will be encountered when trying to offer an internationally comparable picture of landings.

Other Factors

When the analyst has defined his interpretation of the scope of consumption, specified species and commodities included or excluded, and has decided on the weight basis of his computations, he must express his figures clearly in respect to (1) a specified period of time, (2) a circumscribed geographical location, (3) the socio-economic groups of the consumers, and (4) the consumer unit.

These can be listed as follows:

(1) Time element: year, average for several years, bi-annually, quarterly, monthly, weekly, daily.

(2) Geographical location: continent, province, district, rural or urban area, customs area, region, etc.

(3) Socio-economic groups within the particular geographical area (see No. 2): total population of such area during the period of time, religious groups, racial groups, occupational groups, income-class groups, age groups, sex groups, etc.

(4) Consumption of the group selected (see No. 3) can be expressed for the given geographical area (see No. 2) during the specified period of time (see No. 1), in terms of the following concepts or multiples thereof:

(a) total aggregate,

(b) per caput,

(c) by consumption unit: a theoretical conception making provision for weighing the differences in consumption patterns due to age or sex differentials in the group. The consumption unit may be "adult male", "man unit", etc.

(d) by household or by family,

(e) by family consumption unit.

When comparisons are drawn between two or more countries, areas, or groups, or between various periods of time for the same group, attention should be paid to the fact that scientific comparability can be achieved only if (a) the consumption figure refers to the same commodity, (b) in all cases the commodities have been reduced to a common comparable basis, and (c) the figure is expressed for a similar consuming unit.

A FORMULA FOR MEASURING FISH CONSUMPTION

After the analyst has decided on the various steps and aspects as enumerated under Definitions of Basic Concepts above, he can base his computation on the following formula: $C = \frac{Q}{P}$ where C = the average consumption per unit of P; where P = the number of units within the defined consumer group; and Q = the amount consumed during a specified period.

Q can be derived for a given area during a specified time from the following:

$Q = L + B - S + I - E$ where:

L = weight* of fish landed within the area during the period,

B = weight* of stocks on hand at the beginning of the period,

S = weight* of stocks on hand at the end of the period,

I = weight* of all imports during the period,

E = weight* of all exports during the period.

In the case of a perishable product it is not probable that great stocks will be carried over and for practical purposes where the necessary data are lacking, we might consider B and S to be negligible so that in our computation of C the formula may be simplified as follows:

$$C = \frac{L + (I - E)}{P}$$

* Weights in all these cases have previously been converted to a common basis.

COMPARING FISH TO OTHER FOODS

In comparing the consumption of fish as food with the consumption of other foods, the following relationship (which varies from area to area) is to be considered:

(1) Competitive. Regarding fish, we can consider meat, eggs, poultry, game as competitive (alternative) foods.

(2) Complementary. French-fried potatoes, for example, and fats and oils are complementary to fish; olive oils, for instance, complementary to dried, salted cod and related species in certain countries.

(3) Unrelated.

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TABLE 13.- NORTH AND CENTRAL AMERICA: PER CAPUT CONSUMPTION OF FISH

TABLEAU 13.- AMERIQUE DU NORD ET CENTRALE: CONSOMMATION DE POISSON PAR HABITANT

Country / Source	Frank: *	Johnson	Puncochar ϕ	Fiedler ϕ	ILO ≠ / BIT ≠	FAO, The State of Food and Agriculture - 1948 / FAO, Situation de l'alimentation et de l'agriculture -1948			Source / Pays
						Prewar a/ Avant-guerre	1946/47	1947/48	
	(..... Kilograms ..... Kilogrammes .....)								
Bahamas	3.2*	...	...	...	...	...	...	...	Bahama
Barbados	17.4	...	...	...	...	...	...	...	Barbade
Bermuda	16.3	...	...	...	...	...	...	...	Bermudes
British Honduras	2.6	...	5.1	5.1	...	...	...	...	Honduras britannique
British West Indies	12.5	...	30.0b/	30.0	...	...	...	...	Antilles britanniques
Canada c/	...	13.2	...	...	6.4d/	5.4	5.3	4.8	Canada c/
Costa Rica	1.3	...	2.0	2.0	...	...	...	...	Costa-Rica
Cuba	3.8e/	...	8.0	8.0	...	4.2	5.5	5.9	Cuba
Dominican Republic	1.7e/	...	11.2	11.2	...	...	...	...	République Dominicaine
El Salvador	0.2	...	0.5	0.5	...	...	...	...	Salvador
French West Indies	17.7	...	81.7	81.7	...	...	...	...	Antilles françaises
Guatemala	0.1	...	0.3	0.3	...	...	...	...	Guatemala
Haiti	1.2	...	6.4	6.4	...	...	...	...	Haiti
Honduras	0.1	...	0.3	0.3	...	...	...	...	Honduras
Jamaica (and the Caymans)	15.0	...	38.5	38.5	...	...	...	...	Jamaïque (et îles Caïmanes)
Leeward Islands	19.9	...	...	...	...	...	...	...	Iles sous le Vent
Mexico	...	...	...	...	0.9f/	3.6g/	5.0	5.0	Mexique
Netherlands West Indies	11.6	...	29.7	29.7	...	...	...	...	Antilles néerlandaises
Nicaragua	0.1	...	0.2	0.2	...	...	...	...	Nicaragua
Panama	2.9	...	6.8	6.8	...	...	...	...	Panama
Puerto Rico	11.6	...	31.7	31.7	11.0h/	...	...	...	Porto-Rico
United States of America i/	...	6.0	...	...	8.4i/	5.1	4.9	5.0	Etats-Unis d'Amérique i/
Virgin Islands	19.2	...	47.4	47.4	...	...	...	...	Iles Vierges
Windward Islands	7.5	...	...	...	...	...	...	...	Iles du Vent

Symbols:
* = Edible weight basis.
ϕ = Fresh, round weight, ex-water basis (raw fish basis).
≠ = Per adult male.
... = Not available.

/ 1934-38 for some countries, and 1935-39 for others.
/ Area including Antigua, Barbados, Dominica, Grenada, St. Lucia, St. Vincent, Trinidad and Tobago.
/ For more data on Canada see Tables 18 and 19.

/ 1937-38 figure.
/ 1937-42 figure.
/ 1934 figure.
/ 1934-38 figure.
/ 1938 figure.
/ In addition to data and sources mentioned in the table the League of Nations gives a figure of 6.8 kg. for post World War I years and the Fish and Wildlife Service of the United States Department of Agriculture gives 6.0 for 1946 and 6.4 kg. for 1947. For more data on U.S.A. see Table 20.

/ 1934-36 figure.

Signes distinctifs:
* = Poids comestible.
ϕ = Frais, poids brut à la sortie de l'eau (poisson brut).
≠ = Par homme adulte.
... = Non disponible.

a/ 1934-38 pour certains pays et 1935-39 pour d'autres.
b/ La région comprend les îles de Antigua, Barbade, Dominique, Grenade, Ste-Lucie, St-Vincent, Trinité et Tobago.
c/ Pour davantage de données concernant la Canada voir Tableaux 18 et 19.
d/ 1937-38.
e/ 1937-42.
f/ 1934.
g/ 1934-38.
h/ 1938.
i/ Outre les données et les sources mentionnées dans le tableau, la Société des Nations indique un chiffre de 6,8 kg. pour les années ayant suivis la première guerre mondiale, et le Fish and Wildlife Service du Ministère de l'Agriculture des Etats-Unis indique les chiffres de 6,0 kg pour 1946 et 6,4 kg pour 1947. Pour davantage de données concernant les Etats-Unis, voir Tableau 20.
j/ 1934-36.

TABLE 14. - ASIA AND OCEANIA: ANNUAL PER CAPUT CONSUMPTION OF FISH

TABLEAU 14. - ASIE ET OCEANIE : CONSOMMATION ANNUELLE DE POISSON PAR HABITANT

Source / Country	Johnson	ILO / BIT	FAO, The State of Food and Agriculture - 1948* / FAO, Situation de l'alimentation et de l'agriculture - 1948*			Annual Reports to FAO / Rapports annuels à la FAO			Miscellaneous Sources / Sources diverses			Source / Pays
			1934-38	1946/47	1947/48	Prewar / Avant-guerre	Postwar / Après-guerre	Estimated / Chiffres approximatifs				
	(Kilograms / Kilogrammes)											
Australia	5.9	7.0a/	5.1	4.0	5.9	5.1	5.9	...	...	6.4	...	Australie
Burma	...	...	37.2	34.8	33.6	41.0	...	40.0	...	...	...	Birmanie
Ceylon	...	...	9.5	7.2	7.3	4.0	...	5.0	...	...	...	Ceylan
China	...	...	2.8b/	2.7	2.7	...	...	...	...	...	...	Chine
India/Pakistan	...	...	1.6	1.4	1.4	...	...	...	9.0	3.3	...	Inde/Pakistan
Indo-China	...	...	22.8	12.1	12.4	...	...	...	...	...	...	Indochine
Japan	24.9	...	34.4	36.2	37.8	35.7	...	31.2	22.0Φc/	51.0+d/	49.9	Japon
Java and Madura	...	...	4.4	3.6	3.5	...	...	...	...	...	...	Java et Madoura
Korea	...	...	...	...	...	...	18.0	...	...	...	...	Corée
Malaya	...	...	20.5	19.7	19.7	...	...	...	...	...	...	Malaisie
New Zealand	...	...	5.4e/	...	6.3	5.4	6.0	...	11.2f/	...	...	Nouvelle-Zélande
Philippines	...	...	48.4	33.8	46.0	...	...	...	60.9Φ/	70.57	...	Philippines
Ryukyu Islands	...	...	...	...	...	...	...	44.0	...	...	...	Iles Riou-kiou
Siam	...	...	48.4	48.4	48.4	10.0	...	10.0	...	...	...	Siam
Turkey	...	6.1Φh/	2.0	1.9	2.2	...	...	...	...	...	...	Turquie

MISCELLANEOUS SOURCES: For Australia - Bower; for India/Pakistan - Consular Report, 12 June 1937; for Japan - Far East Commission, memorandum No. 127 for first two figures and Commercial Intelligence, 6 December 1941 for the third figure; for New Zealand - the New Zealand Sea Fisheries Investigation Committee; for the Philippines - Ruiz for the first figure and Consular Report, 26 May 1945 for the second figure.

SOURCES DIVERSES : Pour l'Australie - Bower; pour l'Inde/Pakistan - Rapport consulaire, 12 juin 1937; pour le Japon - Commission pour l'Extrême-Orient, Mémorandum No. 127 pour les deux premiers chiffres et conjoncture commerciale, 6 décembre 1941 pour le troisième chiffre; pour la Nouvelle-Zélande - New Zealand Sea Fisheries Investigation Committee; pour les Philippines - Ruiz pour le premier chiffre et Rapport consulaire, 26 mai 1945 pour le deuxième chiffre.

Symbols:
Φ = Edible weight basis.
♂ = Per adult male.
+ = Industrial uses.
... = Not mentioned in source.
* = Includes fresh and processed fish.

Period (when specified in source):
Période (quand indiqué dans la source) :
a/ 1937-38. e/ 1935-39
b/ 1931-37. f/ 1937.
c/ 1943-44. g/ 1936-40.
d/ 1930-34. h/ 1938-39.

Signes distinctifs :
Φ = Sur la base du poids comestible.
♂ = Par homme adulte.
+ = Usages industriels.
... = Non mentionné dans la source.
* = Comprend poisson frais et transformé.

TABLE 15. - AFRICA: ANNUAL PER CAPUT CONSUMPTION OF FISH

TABLEAU 15. - AFRIQUE : CONSOMMATION ANNUELLE DE POISSON PAR HABITANT

Source / Country	Johnson	ILO / BIT	FAO, The State of Food and Agriculture - 1948 / FAO, Situation de l'alimentation et de l'agriculture - 1948			Miscellaneous Sources / Sources diverses	Source / Pays
			1934-38	1946/47	1947/48		
	(.....Kilograms.....Kilogrammes.....)						
Algeria	...	...	2.5	2.6	2.8	...	Algérie
Egypt	3.2	...	3.0	3.0	3.0	....	Egypte
French Morocco	...	...	3.0	5.2	4.1	...	Maroc français
Gold Coast	...	...	...	...	...	8.8	Côte de l'Or
Kenya and Uganda	...	...	1.1	...	...	...	Kenya et Ouganda
Madagascar	...	...	5.0a/	4.5b/	4.5c/	...	Madagascar
Tanganyika	...	...	...	1.1	...	...	Tanganyika
Tunisia	...	...	4.2	1.6	...	...	Tunisie
Union of South Africa	...	6.2≠xd/	2.5a/	3.0b/	2.6c/	2.0	Union Sud-Africaine

Miscellaneous Sources: For South Africa - (South African Board of Trade and Industries, Report No. 180.
Sources diverses : Pour l'Union Sud-Africaine (Report No. 180.

Symbols:
≠ = Per adult male.
x = White race only.
... = Not mentioned by source.

Period (when specified in source):
Période (quand indiqué dans la source) :
a/ 1935-39. c/ 1947.
b/ 1946. d/ 1936.

Signes distinctifs:
≠ = Par homme adulte.
x = Race blanche uniquement.
... = Non mentionné dans la source.

TABLE 16. - SOUTH AMERICA: ANNUAL PER CAPUT CONSUMPTION OF FISH

TABLEAU 16. - AMERIQUE DU SUD : CONSOMMATION ANNUELLE DE POISSON PAR HABITANT

Source / ountry	Frank	Johnson	Puncochar	Fiedler	ILO / BIT	U.S. Fishery Mission / Mission américaine des pêches	FAO, The State of Food and Agriculture - 1948 / FAO, Situation de l'alimentation et de l'agriculture - 1948			Source / Pays
							1935-39	1946	1947	
	(.....Kilograms.....Kilogrammes.....)									
rgentina	2.6*a/	4.5	...	...	8.8≠b/	...	4.5	3.6	3.8	Argentine
olivia	0.5*c/	...	...	...	...	...	...	...	...	Bolivie
razil	1.1*c/	...	...	...	...	...	1.4	2.8	2.9	Brésil
ritish Guiana	12.0*d/	...	...	...	...	...	...	...	...	Guyane anglaise
hile	3.6*	3.6	...	...	10.1≠	...	7.2	11.3	11.2	Chili
olombia	0.5*e/	...	0.5ϕ	0.5ϕ	0.1≠	...	0.6	0.5	...	Colombie
cuador	0.2*	...	...	...	...	...	...	...	...	Equateur
rench Guiana	19.8*e/	...	...	...	...	...	...	...	...	Guyane française
araguay	0.1*	...	...	...	...	...	...	...	...	Paraguay
eru	1.8*f/	...	...	...	...	2.0*	0.9	1.3	1.3	Pérou
urinam	9.7*	...	...	...	...	...	...	...	...	Surinam
ruguay	1.1*	5.4	...	...	...	...	1.9	2.2	2.3	Uruguay
enezuela	7.4*g/	...	13.7ϕ	13.7ϕ	9.4≠	...	...	...	...	Venezuela

ymbols:
* = Edible weight basis.
ϕ = Fresh, round weight ex-water (raw-fish basis).
≠ = Per adult male.
.. = Not available.

Period (when specified in source):
Periode (quand indiquée dans la source):
a/ 1937-1942. e/ 1942.
b/ 1933. f/ 1940-1942.
c/ 1937-41. g/ 1938-1941.
d/ 1944.

Signes distinctifs:
* = Poids comestible.
ϕ = Frais, poids brut à la sortie de l'eau.
≠ = Par homme adulte.
... = Non disponible.

TABLE 17. - EUROPE: ANNUAL PER CAPUT CONSUMPTION OF FISH

TABLEAU 17.- EUROPE: CONSOMMATION ANNUELLE DE POISSON PAR HABITANT

Source / Country	Johnson	ILO / BIT	League of Nations / Société des Nations	World Food Situation	FAO, The State of Food and Agriculture-1948* / FAO, Situation de l'alimentation et de l'agriculture* 1934-38	1946/47	1947/48	1950/51	Annual Reports to FAO / Rapports annuels à la FAO Prewar Avant-guerre	Postwar Après-guerre	1949/50	Source / Pays
Austria	...	1.6≠ a/	...	1.5b/	1.0	0.4	2.0	1.7	...	...	...	Autriche
Belgium	7.7	8.9≠ c/	...	11.2d/	9.0	10.2	10.2	9.8	...	...	...	Belgique
Bulgaria	...	3.9≠ e/	...	0.7d/	1.0	0.6	0.7	0.7	...	...	...	Bulgarie
Czechoslovakia	...	...	...	1.4d/	1.2	0.2	2.6	1.5	...	...	...	Tchécoslovaquie
Denmark	17.7	8.7≠ f/	11.3g/	14.8d/	15.0	12.9	17.9	16.3	8.2h/	16.1i/	...	Danemark
Finland	...	16.0≠ j/	...	9.5d/	6.0	6.3	7.1	5.5	...	...	...	Finlande
France	6.4	...	7.5-8.2g/	8.5d/	8.0	4.7	5.4	6.7	9.0k/	...	7.7	France
Germany	8.2	6.5≠ l/	6.6e/	11.5d/	12.0	...	...	...	...	...	...	Allemagne
Bizone	...	...	...	...	...	5.5	6.3	7.1	10.8k/	7.5m/	...	Bizone
French Zone and Saar	...	...	...	...	...	3.1	3.0	7.8	...	...	...	Zone française et Sarre
Soviet Zone	...	...	...	...	...	1.0	1.0	1.3	...	...	...	Zone soviétique
Greece	...	...	...	5.2d/	5.3	6.6	7.7	7.2	...	...	...	Grèce
Hungary	...	0.3≠ n/	...	0.8d/	0.9	0.2	0.5	1.0	...	...	...	Hongrie
Iceland	...	...	...	...	34.5	30.8	...	29.6	...	...	...	Islande
Ireland	...	...	...	...	2.5	2.7	3.7	4.0	...	...	...	Irlande
Italy	4.1	...	5.0g/	6.0d/	5.9	4.3	5.5	5.7	...	...	...	Italie
Luxembourg	...	...	...	...	5.1	3.9	4.6	5.5	3.0h/	...	...	Luxembourg
Netherlands	13.2	6.1≠ o/	...	11.3d/	7.6	11.0	10.4	8.1	9.0p/	14.3i/	10.5	Pays-Bas
Norway	20.0	49.3 # e/	53.0e/	11.3d/	21.0	25.2	26.9	21.2	40.0	...	40.0	Norvège
Poland	...	4.6 n/	...	...	2.0	...	2.9	3.0	...	...	...	Pologne
Portugal	16.8	63.7≠ p/	...	19,9d/	15.4	13.0	12.8	9.3	...	...	...	Portugal
Rumania	...	...	...	1.2d/	1.0	0.5	0.5	0.7	...	...	...	Roumanie
Spain	7.3	...	...	18.0d/	12.5	8.3	7.3	15.0	...	...	...	Espagne
Sweden	23.6	18.1≠q/	15.5 # r/	22.4d/	23.3	21.4	24.8	20.1	...	...	...	Suède
Switzerland	...	1.0≠s/	2.7-3.0g/	2.0d/	1.0	1.8	2.0	1.4	...	...	...	Suisse
United Kingdom	15.9	...	18.1t/	...	12.1	13.9	15.1	15.9	...	...	...	Royaume-Uni
Yugoslavia	...	...	...	0.3d/	0.2	0.5	0.6	1.9	...	...	...	Yougoslavie

Symbols: * = Figures from this source represent fillet weight, except in the case of Bulgaria (1950/51), Czechoslovakia (1934-38, 1950/51), Germany (1934-38), Greece (1934-38), Italy and the Netherlands (all periods), and Poland (1947/48, 1950/51), where per caput consumption figures include fish at fresh weight.
≠ = Per adult male.
# = Per average household.
... = Not mentioned in source.

Signes distinctifs * = Les chiffres de cette source représentent les poids de poisson en filets, sauf pour la Bulgarie (1950/51), la Tchécoslovaquie (1934-38, 1950/51), l'Allemagne (1934-38), la Grèce (1934-38), l'Italie, les Pays-Bas (toutes périodes) et la Pologne (1947/48, 1950/51), où les chiffres de consommation par habitant comprennent le poisson évalué en poids frais.
≠ = Par homme adulte.
# = Par famille moyenne.
... = Non mentionné dans la source.

Period: (when specified in source):
Période: (quand indiqué dans la source):

a/ 1934. b/ 1937-38. c/ 1933-38. d/ 1933-38. e/ 1927-28. f/ 1931. g/ 1927-34. h/ 1935-39. i/ 1947. j/ 1928. k/ 1934-38. l/ 1937. m/ 1948/49. n/ 1929. o/ 1935-36. p/ 1938. q/ 1933. r/ 1930. s/ 1936-37. t/ 1924-28.

NOTE

U.S.S.R.: No figures are available. The following prewar figures have been obtained from the ILO source:

Estonia 1937-38 - 27.1 kg. per adult male.
Latvia, 1936-37 - 19.4 kg. per adult male.
Lithuania, 1936-37 - 10.2 kg per adult male.

NOTE

U.S.S.R.: Aucun chiffre disponible. Les chiffres reproduits ci-après et relatifs à l'avant-guerre sont extraits du document du BIT:

Estonie, 1937-38 - 27,1 kg par homme adulte.
Latvie, 1936-37 - 19,4 kg par homme adulte.
Lithuanie, 1936-37 - 10,2 kg par homme adulte.

TABLE 18. - CANADA: DOMESTIC CONSUMPTION OF FISH
Calendar Year 1947

TABLEAU 18. - CANADA : CONSOMMATION NATIONALE DE POISSON
Année Civile 1947

Product	Canadian Production	Stocks		Foreign Trade		Can. Supply for Food		Per Caput Consumption (Edible Weight)	Produits
		Beginning of year	End of Year	Exports	Imports	Product Weight	Edible Weight		
	Production canadienne	Stocks		Commerce extérieur		Approvisionnements alimentaires canadiens		Consommation (poids comestible)	
		Début d'année	Fin d'année	Exportations	Importations	Poids de production	Poids comestible		
	(.....Metric tons a/.....)					(.....En tonnes métriques a/.....)		Kg. per year b/ kg par année b/	
TOTAL	289,158	52,761	46,042	208,458	7,854	95,274	61,624	4.90	TOTAL
Fresh and frozen fish									Poisson frais et congelé
Sea fish, round or dressed	93,017	12,154	12,341	56,959	2,254	38,124	17,117	1.36	Poisson de mer, brut ou apprêté
Sea fish, filleted	15,184	3,117	1,421	9,780	940	8,041	8,041	0.64	Poisson de mer, en filets
Fresh-water fish	35,293	2,063	972	25,478	-	10,906	4,671	0.37	Poisson d'eau douce
Crustaceans and molluscs	15,141	95	58	8,503	1,258	7,933	1,533	0.12	Crustacés et mollusques
Cured fish									Poisson traité
Smoked	9,535	2,974	3,632	6,202	45	2,720	2,716	0.22	Poisson fumé
Salted and dried c/	20,417	6,775	7,245	19,593	1,106	1,461	1,830	0.15	Poisson salé et séché c/
Pickled d/	15,640	1,840	3,779	11,568	1,125	3,259	2,886	0.23	Poisson mariné d/
Canned fish, crustaceans, and molluscs	84,931	23,743	16,594	70,375	1,126	22,830	22,830	1.81	Poisson, crustacés et mollusques en conserves stérilsées

SOURCES: Jean B. Tousignant: Fish Consumption in Canada (A Statistical Report for 1945, 1946, and 1947) Department of Fisheries, Ottawa, May 1948.

a/ Converted from 1,000 lb. units; multiplier: 0.45359.
b/ Converted from lb.; multiplier: 0.45359.
c/ Wet-salted fish has been adjusted to a dried basis.
d/ Pickled and vinegar-cured.

SOURCE : Jean B. Tousignant : Fish Consumption in Canada (Rapport statistique pour 1945, 1946 et 1947) Département des pêches, Ottawa, mai 1948.

a/ Convertis à partir d'unités de 1.000 livres; multiplicateur: 0,45359.
b/ Convertis de livres; multiplicateur: 0,45359.
c/ On a ajouté le poisson salé vert évalué en poids de poisson sec.
d/ En saumure et au vinaigre.

TABLE 19. - CANADA: PER CAPUT CONSUMPTION OF FISH, MEAT, POULTRY, AND EGGS, 1945-47

TABLEAU 19. - CANADA: CONSOMMATION DE POISSON, VIANDE, VOLAILLE ET OEUFS PAR HABITANT, 1945-47

Product	1945	1946	1947	Produits
	(....Kilograms a/...Kilogrammes a/...)			
MEAT b/	64.3	66.0	65.7	VIANDE b/
POULTRY c/	11.7	9.9	9.7	VOLAILLE c/
EGGS d/	15.3	15.1	14.9	OEUFS d/
FISH - GRAND TOTAL e/	4.5	5.4	4.9	POISSON - TOTAL GENERAL e/
Fish, fresh and frozen: Total	(2.9)	(3.1)	(2.5)	Poisson frais et congelé:
Sea fish, round or dressed	1.5	1.4	1.4	Poisson de mer, brut ou a
Sea fish, filleted	0.9	1.2	0.6	Poisson de mer, en filets
Fresh-water fish	0.4	0.4	0.4	Poisson d'eau douce
Shellfish f/	0.1	0.1	0.1	Crustacés et mollusques
Fish, cured: Total	(0.8)	(0.9)	(0.6)	Poisson traité: Total
Smoked	0.3	0.3	0.2	Poisson fumé
Pickled (in brine)	0.3	0.2	0.2	Poisson mariné (en saumur
Salted	0.2	0.4	0.2	Poisson salé
Fish, canned: Total	0.8	1.4	1.8	Poisson, en conserves stérilisées: Total

SOURCE: Jean B. Tousignant: Fish Consumption in Canada, Department of Fisheries, Ottawa, May 1948.

a/ Converted from pounds (lb.); multiplier: 0.45359.
b/ Carcass weight for most meat products.
c/ Dressed weight.
d/ Shell egg equivalent.
e/ Edible weight.
f/ Crustaceans and molluscs.

SOURCE : Jean B. Tousignant: Fish Consumption Canada, Department of Fisheries, Ottawa, mai 19

a/ Convertis à partir de livres (lb) avoirdupo multiplicateur: 0,45359.
b/ Poids carcasse pour la plupart des produits base de viande.
c/ Poids de produit apprêté.
d/ Equivalent en coquilles.
e/ Poids comestible.

TABLE 20. - UNITED STATES OF AMERICA: PER CAPUT CONSUMPTION OF FISH, CRUSTACEANS, AND MOLLUSCS, 1930-40

TABLEAU 20. - ETATS-UNIS D'AMERIQUE : CONSOMMATION DE POISSONS, CRUSTACES ET MOLLUSQUES PAR HABITANT, 1930-40

Year	Kilograms a/	Year	Kilograms a/
Année	Kilogrammes a/	Année	Kilogrammes a/
1930	5.8	1936	7.2
1931	5.7	1937	7.1
1932	5.1	1938	6.7
1933	5.4	1939	6.7
1934	6.4	1940	6.4
1935	6.7		

SOURCE: National Food Situation. United States Department of Agriculture: August 1941, p. 17, Table 6.

SOURCE : National Food Situation. U.S. Department of Agriculture : août 1941, p. 17, Tableau 6.

REVIEW OF RECENT WORLD FISHERIES ACTIVITIES

1948 SUMMARY

At the completion of the Fisheries Bulletin on 7 March, more or less tentative end-of-year reports for 1948 had been received from eight countries: Canada, Finland, Iceland, Ireland, Newfoundland, Norway, the United Kingdom and the United States of America. In the aggregate, total landings in these countries amounted to some 5,500,000 tons compared with 5,100 000 tons in 1947, 4,800,000 tons in 1946, 4,300,000 in 1945, and 4,900,000 in 1938.

These figures are influenced by the fact that Newfoundland's landings statistics are computed on the basis of exported quantities. If it had been possible to allow for the time lag between landing and exports, total landings in 1948 would not have been quite as high as shown above. In spite of this, total 1948 landings in these eight countries representing some 25-30 percent of world landings amounted to some 10 percent more than their landings in 1938.

UNITED STATES OF AMERICA (INCLUDING ALASKA)-1948

During 1948, United States and Alaskan fishermen caught about 2.04 million tons of fish and shellfish, having an estimated value of over $300,000,000 to the fishermen. The volume of the catch was almost identical with the production in the three previous years and the average yield during 1935-39.

Outstanding developments during the year were the record catches of tuna and rosefish, the continued high production of menhaden, and the declines in the catches of salmon and Pacific and Atlantic mackerel. The catch of menhaden off the Atlantic Coast and Gulf States is estimated at about 430,000 tons -- more than twice the production of salmon, which held second place. The Pacific pilchard or sardine fishery yielded a catch of about 163,000 tons, a recovery of over 45,000 tons from the low level of the previous year. Pacific Coast fishermen landed nearly 136,000 tons of tuna during the year, a new record figure and the catch of sea herring on both coasts totaled somewhat over 136,000 tons. The catch of rosefish (redfish) totaled 109,000 tons, a new record and also an increase of 43,000 tons over the previous year.

Disposition of the Catch: Sufficient data are not yet available to determine accurately the 1948 disposition of the domestic catch of fishery products. However, it is expected that it will be quite similar to that in the previous year, when the catch of about 2 million tons was utilized as follows (round fresh weight basis):

Fishery Product	Metric tons
Fresh and frozen fish	769,000
Canned fish	578,000
Cured fish	52,000
By products and bait	596,000

Fishing Craft: About 1,200 vessels of five net tons and over were added and documented as fishing craft during 1948. This was about 8 percent less than the number entering the fleet the previous year, but between three and four times the number documented annually prior to 1940. In 1940, the entire fleet in the United States and Alaska totaled only 5,562 vessels, while in the four years ending with 1948, a total of 4,300 vessels were documented as fishing craft. Despite the large increase in the size of the fleet, the annual catch has remained almost identical with the prewar production. This has largely been due to the low yields of salmon in Alaska and pilchards in California.

Canned Fish and Shellfish: The total 1948 pack of canned fishery products is estimated at about 340,000 tons -- approximately the same as in 1947, when the production totaled 342,000 tons. The production of canned salmon amounted to only 103,000 tons -- nearly 22,000 tons less than in 1947. On the other hand the packs of Maine sardines (over 29,000 tons) and tuna (over 58,000 tons) were the largest in history. The California pack of mackerel was about 11,000 tons less than the record production of 30,000 tons in 1947.

Frozen Fish: Preliminary data for the United States and Alaska indicate that during 1948 more than 132,000 tons of fishery products were frozen, according to reports from firms sending statistics to the Fish and Wildlife Service. This was an increase of about 20,000 tons over 1947 and 2,000 tons greater than the former record of 130,000 tons established in 1945. The major portion of the increase was due to heavy freezings of rosefish fillets, which were about 11,000 tons greater than in the previous year. During the early months of 1948, stocks of frozen fish remained below those for the same period in 1947. From July on, they averaged above the holdings for the latter part of 1947; however, they were still considerably below the 1946 average for this period.

Fish Meal and Oil: The production of fish meal in 1948 is estimated at about 169,000 tons, the same as in the previous year, while the yield of oil is believed to have totaled about 53,000 tons, compared with 56,000 tons produced in 1947.

Foreign Trade: During the first nine months of 1948, imports of edible fishery products amounted to 158,000 tons, compared with 121,000 tons in the same period the previous year. Exports of edible fishery products during this period amounted to only 32,000 tons, less than half the 72,000 tons exported during the first nine months of 1947. There was a large increase in the imports of groundfish. Total imports of these fillets in 1948 amounted to 24,000 tons, compared with 16,000 tons in 1947, and the former record imports of 22,000 tons in 1946.

SOURCE: United States Department of the Interior, Fish and Wildlife Service, Report No. 14 (New York) - 20 Jan. 1949.

CANADA - 1948

According to tentative statistics, the quantity landed in 1948 amounted to 579,000 tons and was valued at 59.9 million Canadian dollars. However, revised corresponding figures for 1947 indicate landings of 518,000 tons, valued at 45.3 million Canadian dollars, and the 1948 quantity is about 11 percent above the 1947 figure and its value has risen about 32 percent above that of 1947. Over 50 percent of the increase of 14.6 million Canadian dollars in value is a result of the higher value of salmon landings. In terms of quantities landed, however, salmon shows a decline from 75,000 tons in 1947 to 65,000 tons in 1948. Declines in quantities landed are also reported for halibut, Atlantic herring, and young herring which are called "sardines", but price increases actually resulted in a high rise in the value of these "sardine" landings.

Cod landings increased from 106,000 tons in 1947 to 113,000 tons. Haddock, pollock, and hake were also landed in somewhat larger quantities.

Pacific herring landings rose from 116,000 tons in 1947 to 175,000 tons in 1948.

On the Pacific Coast less of the quantities of herring landed was used for canning and more for reduction to oil and meal. In 1947, 72.9 percent of the quantity landed was canned and 19.7 percent went into nonfood uses; in 1948, only 10.6 percent was canned and 89.3 percent used for nonfood uses.

Value of imports of fish products for the 10 months from January to October 1948, amounted to 4,576,000 Canadian dollars as compared with 4,152,000 Canadian dollars for the same period in 1947.

Statistics on exports during the 11 months ending in November 1948 indicate an increase in the total value. From January to November, fish products amounting to 78.2 million Canadian dollars were exported in 1948, as compared with exports valued at 74.9 million Canadian dollars in 1947. Canned herring showed a great decline, but exports of canned sardines and pickled mackerel increased slightly. Exports of canned salmon to the United Kingdom dropped, but sales to the Union of South Africa and Belgium increased.

Quantities held in cold storage at the end of the year show a 10 percent decrease over the stocks at the end of 1947.

The index of Canadian wholesale fish prices (1935-1938=100) shows the level in October and November 1948 to be 259.8, as compared with 237.8 in November and December 1947.

SOURCE: Canada, Dominion Bureau of Statistics,
Monthly Review of Canadian Fisheries Statistics,
December 1948. Ottawa.

NEWFOUNDLAND - 1948

A preliminary report of the Newfoundland Fisheries Board, compiled before all the 1948 figures were available, indicates that the 1948 production of salted cod will probably not exceed 46,000 tons, as compared with 59,000 tons in 1947. Excessively stormy weather conditions, which destroyed equipment and hampered operations, and a serious bait shortage, owing to the lack of squid, brought about a drop in the output of both the Newfoundland inshore and bank fisheries, but an improvement took place in the Labrador fisheries.

The number of men employed in the cod fisheries - about 28,000 - remained more or less the same as in 1947.

The export marketing of the products continued to be the responsibility of the Newfoundland Associated Fish Exporters Limited (NAFEL), the cooperative export-marketing group having the sole right since 1947 to export fish and fishery products. The demand was good and prices moved upward. Meetings were held to improve the relationships between producers and exporters. A serious difficulty was the lack of convertibility into dollars of the currencies obtained by the exporters, but the Newfoundland Government made dollars available and ECA activities provided further assistance in this matter.

Preliminary estimates indicate that exports of frozen and chilled cod fillets and whole round cod to the United States of America increased from 5,520 tons in 1947 to 7,300 tons in 1948. Exports of frozen and chilled products from groundfish, such as, haddock, rosefish, and the teleostean flatfishes (flounder and halibut) doubled the 1947 figures, and the 1948 level is predicted as between 4,000 and 4,500 tons. The increasing use of draggers is adding to the production of fish for frozen fish.

Pickled herring exports in 1948 will probably be around 17,000 tons, as compared with 15,000 tons in 1947. The increase is due to deliveries for consumption in Germany under a contract with the United States authorities.

Salmon exports increased slightly to about 1,000 tons, and exports of live lobsters reached a peak when 1,600 tons were exported. Large quantities are being shipped by plane to the United States.

Seal and whale fisheries both show substantial increases. The decline in cod production is reflected in a drop in the output of the cod liver oils, but an increase in the production of whale oil compensated for this decline.

Several minor teleostean species add appreciably to the total output. It is estimated that the 1948 export values will be much higher than those of 1947, which had a value of 26,283,000 Canadian dollars.

Statistics on landings as reported in Table 21 are computed by the Newfoundland Fisheries Board on the basis of exported quantities. Because of the time lapse between landings and exports, the smaller landings during 1948 are not reflected in the table.

SOURCE: Report by the Newfoundland Fisheries Board,
in The Daily News, St. John's, Newfoundland,
31 December 1948.

UNITED KINGDOM - 1948

According to preliminary reports, total 1948 landings in Great Britain (England, Wales, and Scotland) amounted to 1,081,000 tons which is some 50,000 tons in excess of those of the previous year and only some 7,000 tons less than 1938 landings.

In Table 28 figures are given for the total landings in 1938 and 1945-48, together with subtotals for the main groups of species.

The decrease in landings of plaice, hake, and haddock, despite greater effort devoted to fishing, has been taken to indicate too much exploitation of nearby fishing grounds in the North Sea.

One of the fisheries magazines of the country 1/ points out the urgency of due attention to future operations "with its promise of bigger and faster trawlers fishing more distant and prolifically stocked grounds, which, though not providing the same fine selection of fish as was once obtained in fair quantity from near waters, will ensure at least a continuance of productivity in the industry ..... a full realization of the vast potentialities which the future holds in store, many of which are already to hand, is enough incentive and encouragement to ensure the continued progress of the industry." These remarks may be taken to express the spirit of the continuing postwar expansion of fisheries in Europe.

1/ Fish Trades Gazette, London, 29 January 1949, p.9

The number of fishing craft in Great Britain developed as follows during 1945-47, in comparison with 1937 and 1938:

	1937	1938	1945	1946	1947
Trawlers	2,198	2,093	1,523	1,853	2,016
Drifters and line fishing craft	3,197	3,177	2,618	3,107	3,211
Others (inshore)	6,336	6,233	8,854	7,975	7,750
Total	11,731	11,503	12,995	12,935	12,977

In 1948 this expansion continued. The Fish Trades Gazette states that throughout 1948 bigger and better trawlers, fitted with every possible modern navigational aid and used mainly for Arctic fishing, went into operation.

NORWAY - 1948

According to preliminary figures published in Fiskets Gang, the total landings in Norway for 1948 exceeded all previous records, amounting to some 1.3 million tons landed weight, 2/ compared with 1.1 million tons in 1947, which was slightly below the all-time record of 1940. The high figures for Norwegian landings in 1948 are entirely due to the extremely favorable winter herring fisheries, landings from which amounted to some 880,000 tons, as compared to 530,000 tons in 1947, which was at that time the all-time record figure. The mackerel fisheries also gave maximum results but figures on mackerel landings never change the total picture very much. Landings from cod fisheries during the coastal fishing in the first six months of the year were lagging considerably compared with the previous year and so were the fisheries carried on in distant waters, both with long-lining and otter trawling. Long-lining on coastal banks was also less successful than in the previous postwar years.

The total value of Norwegian landings in 1948 amounted to some 325 million kroner or about 65 million dollars. This total value paid to fishermen is far in excess of any previous records.

For the years 1946-48, figures from Norway have also been supplied on a round fresh-weight basis. Table 21 gives further details on landings, utilization, and end-products.

ICELAND - 1948

According to preliminary figures, total landings by Icelandic fishing craft in 1948 amounted to 409,208 tons landed weight, some 22,000 tons less than the landings in 1947. The decrease is mainly due to smaller landings of herring. There were also slightly smaller landings of cod. Substantially larger landings of saithe, redfish, and catfish did not outbalance the lagging herring fisheries.

During 1948 substantial changes took place in marketing. Fishing vessels landed fresh fish in foreign countries to the amount of 143,000 tons, as compared with 72,000 tons during the previous year. Exports of fresh fish by freighters increased from 2,000 tons in 1947 to 11,000 tons in 1948. From the total landings

2/ As usually recorded in Norwegian fisheries statistics.

76,000 tons were frozen in 1948, an amount which is slightly higher than the 1947 quantity. The amount of fish which was salted decreased from 75,000 tons in 1947 to 42,000 tons in 1948. Only 130,000 tons were used for oil and meal reduction as compared with 200,000 tons in 1947.

FINLAND - 1948

Total landings in Finland amounted to 46,000 tons round fresh weight, which is the same quantity as reported for 1947. In 1946 total landings amounted to 49,000 tons.

IRELAND - 1948

Landings in Ireland in 1948, amounting to 21,000 tons, were about the same as for the four previous years. However, this quantity is almost double the figure reported for landings in 1938.

GUATEMALA - 1948

No statistics on the fisheries industry of Guatemala are available, according to a letter dated 25 January 1949 from the National FAO Committee of Guatemala to the Fisheries Division of FAO.

SYRIA - 1947

A communication from the Ministry of Foreign Affairs in Syria states that the products of the marine and river fisheries are utilized for consumption within the country. Fisheries production is limited to this purpose, and there are no exports of aquatic products. The production of the fisheries in Syria has been reported to be 1,042 tons.

BRITISH HONDURAS - 1946

There is no Fisheries Department. Fishing in the Colony engages about 125 fishing dories and smacks varying in length from fifteen feet to thirty-five feet and averaging from half a ton to ten tons each, with an aggregate of 150 tons.

SOURCE: Colonial Office, Annual Report on British Honduras for the Year, 1946, H.M. Stationery Office, London, 1947.

TABLE 21. - NORWAY AND NEWFOUNDLAND: LANDINGS, THEIR UTILIZATION, AND PRINCIPAL END-PRODUCTS, 1946-48

TABLEAU 21. - NORVEGE ET TERRE-NEUVE : MISES A TERRE, LEUR UTILISATION ET PRINCIPAUX PRODUITS FINIS, 1946-48

Item	Norway / Norvège			Newfoundland / Terre-Neuve			Articles
	1946	1947	1948	1946	1947	1948	
	(. . . . . Metric ton			. . . . . Tonnes métriques* . . . . .)			
LANDINGS: Total	933,300	1,205,300	1,454,134	377,327	278,139	374,930	Total: MISES A TERRE
Salmon and allied species	1,200	1,200	1,200	2,963	3,092	3,209	Saumon et espèces voisines
Teleostean flatfishes	6,800	8,600	6,600	194	263	1,162	Téléostéens plats
Cod, hake, and allied species	394,000	524,000	354,500	297,220	226,205	308,228	Morue, merlus et espèces voisines
Herring and allied species	510,490	635,500	1,032,843	73,541	41,720	51,707	Hareng et espèces voisines
Tunas, true mackerels, and allied species	7,350	14,500	13,300	523	2,115	1,622	Thons, scombres et espèces voisines
Other teleostean marine species	3,060	3,500	10,513	1,131	2,839	4,002	Autres espèces téléostéennes marines
Shark, ray, skates, etc.	3,500	9,500	24,720	-	-	-	Requin, raie, plie, etc.
Crustaceans and molluscs	6,900	8,500	10,458	1,755	1,905	5,000	Crustacés et mollusques
UTILIZATION: Total	933,300	1,205,300	1,454,134	377,327	278,139	374,930	Total: UTILISATION
For human consumption	311,850	388,518	655,947	148,567	92,059	369,600	Pour l'alimentation humaine
For meal and oil	325,050	399,394	744,285	7,888	9,385	5,330	Huiles et farines
Bait	15,400	18,093	22,442	-	-	-	Appât
All residual	281,000	399,295	31,460	220,872	176,695	-	Tous les résidus
PRINCIPAL END-PRODUCTS: Total	425,574	567,733	667,279	124,966	86,474	110,122	Total: PRINCIPAUX PRODUITS FINIS
Fresh and frozen herring	82,114	120,115	147,590	3,108	3,174	1,541	Hareng frais et congelé
Dressed and round, fresh or frozen cod and allied species	53,000	99,000	74,000	3,706	4,367	3,706	Morue et espèces voisines, vidés, poids brut, frais ou congelés
Other fresh or frozen products	24,780	35,827	37,654	4,034	4,647	5,559	Autres produits frais ou congelés
Frozen filet of cod and allied species	3,700	15,000	13,600	15,243	5,983	10,040	Filets de morue et espèces voisines congelés
Salted and/or dried cod and allied species	65,500	63,300	55,000	58,148a/	46,759b/	64,429	Morue salée et/ou séchée et espèces voisines
Cod, and allied species, dried only (stockfish)	13,100	150,000	8,500	-	-	-	Morue et espèces voisines, séchées seulement (stockfisch)
Salted herring and allied species	79,900	87,900	126,700	30,013	15,963	19,564	Hareng et espèces voisines, salés
Canned herring and allied species	14,000	17,300	27,700	54	45	303	Hareng en conserve
Other canned products	1,100	2,315	4,560	436	425	244	Autres produits en conserve
Herring meal	49,981	55,626	110,000	166	933	953	Farine de hareng
Other fish meal	9,518	16,423	13,505	2,471	1,085	1,402	Farine d'autres poissons
Herring oil	14,731	22,377	40,000	20	147	533	Huile de hareng
Other fish oil	14,150	17,550	8,470	7,567	3,950	2,048	Huile d'autres poissons

SOURCE: For 1946,1947, and 1948: FAO Questionnaire, Preliminary Report on Landings and Utilization, Washington.

* Landings and Utilization - round, fresh weight.
Principal End-Products - product weight.

a/ Includes 17 tons of pickled milt.
b/ Includes 4 tons of pickled milt.

SOURCE : Pour 1946, 1947 et 1948- questionnaire de la FAO, Rapport préliminaire sur les mises à terre et leur utilisation, Washington.

* Mises à terre et utilisation - poids brut de poisson frais.
Principaux produits finis - poids net.

a/ Comprend 17 tonnes de laite au vinaigre.
b/ Comprend 4 tonnes de laite au vinaigre.

TABLE 22. - ICELAND: EXPORTS OF PRINCIPAL FISHERIES PRODUCTS, 1938 and 1946-49

TABLEAU 22. - ISLANDE : EXPORTATIONS DES PRINCIPAUX PRODUITS DES PECHES, 1938 et 1946-49

Item	Calendar year / Annee civile				January / Janvier		Articles
	1938	1946*	1947	1948	1948	1949	
	(.....Metric tons a/.....)			(.....Tonnes métriques a/.....)			
Fish, fresh or frozen: Total	17,430	96,710	87,621	151,781	12,374	13,703	Total: Poisson, frais ou congelé
Herrings, fresh or frozen	82	48 b/	867 c/	4,033 c/	2,642 c/	-	Hareng, frais ou congelé
Other fish, iced or frozen	17,135	96,662	86,750	147,641	9,732	13,703	Autres poissons, dans la glace ou congelés
Fish roe							Rogue de poissons,
Refrigerated	174	d/	d/	d/	d/	d/	Réfrigérée
Frozen	39	d/	4	107	3	79	Congelée
Fish, cured: Total	30,248	28,769	35,268	28,371	1,342	1,769	Total: Poisson, traité
Herrings, salted	32,887 e/	15,866	6,603	11,020	38	11	Hareng salé
Other fish, salted, not dried	22,724	11,196 f/	26,623 g/	14,753 h/	1,211 i/	1,660 j/	Autres poissons salés, non séchés
Fish, dried-salted (klipfish)	21,593	16	300	1,506	91	93	Poisson séché salé (klipfisch)
Fish, dried (stockfish)	470	108	6	6	4	-	Poisson séché (stockfisch)
Roe, salted	2,574 k/	1,583	1,760	1,086	2	-	Rogue
Fish, canned	15	514	340	959	153	48	Poisson en conserves stérilisées
Shrimp, canned	60	...	...	...	...	...	Crevettes en conserves stérilisé
Fish meal: Total	22,294	16,364	16,622	39,617	8,570	405	Total: Farine de poisson
Herring meal	17,900	10,195	11,155	34,118	8,460	345	Farine de hareng
Other fish meal	4,394	6,169	5,467	5,499	110	60	Farine d'autres poissons
Marine oils: Total	28,763	25,292	25,934	37,144	2,100	104	Total: Huiles de poisson
Herring oil	22,827	17,534	20,527	28,336	1,019	-	Huile de hareng
Redfish body oil	378	18	-	l/	l/	l/	Graisse de chair de sébaste
Other fish oil	4,715	7,737	5,407	8,035	1,081	104	Huile d'autres poissons
Whale oil	843	3	-	773	-	-	Huile de baleine
Whale products	397	...	-	864	-	14	Produits extraits de la baleine
Other fisheries products	536 m/	67 n/	-	3 n/	-	-	Autres produits des pêches

SOURCE: For 1938: FAO Yearbook of Fisheries Statistics-1947, Table 60; 1946 and 1947: Fiskifelag Islands, Aegir, Reykjavik February 1948; 1948 and January 1948-49: Special reports from Fiskifelag Islands, Reykjavik.

* Figures published in FAO Fisheries Bulletin, No. 2, (trial run) have been revised.

a/ Exported weight.
b/ Frozen.
c/ Iced and frozen.
d/ May be included with "Other fish, iced or frozen."
e/ Including smoked herring.
f/ Including 288 tons of fish, salted in barrels.
g/ Including 23 tons of salted fish fillets.
h/ Comprising 13,309 tons of wet-salted fish, 173 tons of specially cured wet-salted fish, 404 tons of fish salted in barrels, and 867 tons of salted fish fillets.
i/ Including 52 tons of specially cured wet-salted fish.
j/ Including 5 tons of fish, salted in barrels, and one ton of salted fish fillets.
k/ Salted cod roe, only.
l/ May be included with "Other fish oil."
m/ Comprising dried fish bones, fish livers, dried and salted fish maw, and dried fish waste.
n/ Salted fish skins.

SOURCE : Pour 1948 - Annuaire statistique des pêches- 1947, publié par la FAO, Tableau 60; pour 1946 et 1947 - Fiskifélag Islands, Aegir, Reykjavik, février 1948; pour 1948 et janvier 1948-49 - rapports inédits du Fiskifelag Islands, Reykjavik.

* Les chiffres publiés dans le Bulletin des pêches, No. 2 (numéro d'essai) ont été révisés.

a/ Poids à l'embarquement.
b/ Congelé.
c/ Dans la glace ou congelé.
d/ Peut être compris avec "Autres poissons, dans la glace ou congelés"
e/ Y compris hareng fumé.
f/ Y compris 288 tonnes de poisson salé en barils.
g/ Y compris 23 tonnes de filets de poisson salés.
h/ Compris 13.309 tonnes de poisson salé vert, 173 tonnes de poisson salé vert ayant subis un traitement spécial, 404 tonnes de poisson sal en barils et 867 tonnes de filets de poisson salés.
i/ Y compris 52 tonnes de poisson salé vert ayant subis un traitement spécial.
j/ Y compris 5 tonnes de poisson salé en barils et une tonne de filet de poisson salé.
k/ Rogue de morue salée seulement.
l/ Peut être compris avec "huile d'autres poissons".
m/ Comprend os de poisson séchés, foies de poisson, vessies natatoire salées et séchées et déchets de poisson séchés.
n/ Peaux de poisson salées.

TABLE 23. - ICELAND: LANDINGS AND UTILIZATION, 1938 and 1946-49

TABLEAU 23. - ISLANDE : MISES A TERRE ET UTILISATION, 1938 et 1946-49

Species	Calendar year / Année civile				January / Janvier			Espèces
	1938	1946	1947	1948	1947	1948	1949	
	(.....Metric tons a/.....)				(.....Tonnes métriques a/.....)			
LANDINGS: Total	247,178 b/	326,279	431,170	409,208	13,022	57,797	15,288	Total : MISES A TERRE
Cod	76,259	154,750	151,363	145,549	3,171	47,133	9,861	Morue
Cusk	256	502	453	606	21	21	48	Brosme
Haddock	2,380	9,038	12,922	16,935	346	503	789	Aiglefin
Ling	892	1,518	4,586	4,492	98	179	194	Lingue
Pollock	-	171	12	207	ø	ø	ø	Lieu
Saithe	9,464	16,090	26,124	53,841	302	873	1,243	Lieu noir, colin
Herring	155,876	131,722	216,948	150,122	3,149	47,582	161	Hareng
Plaice	1,606	2,559	3,333	3,940	136	81	21	Plie
Skate	85	172	83	109	11	7	16	Raie
Lemon sole	-	577	807	938	ø	-	ø	Sole limande
Catfish	921	4,181	5,423	10,599	201	321	602	Loup de mer
Redfish	459 c/	4,261	8,227	20,394	530	1,016	2,181	Sébaste
Halibut	...	736	808	1,465	57	81	92	Flétan
Megrims	...	2	6	11	-	-	-	Cardine
UTILIZATION:								UTILISATION :
Exported iced:								Exporté dans la glace :
In fishing vessels	...	53,727	72,346	143,139	3,577	6,492	11,631	Dans les bateaux de pêche
In cargo vessels	...	36,954	2,332	11,226	428	2,501	-	Dans les cargos
Frozen	...	73,113	71,147	76,428	5,605	3,305	2,713	Congelé
Salted	...	47,440	75,105	42,324	986	220	636	Salé
Canned	...	1,055	318	435	31	92	20	Mis en conserve
Fresh domestic consumption	...	2,472	2,513	2,940	86	162	127	Frais, pour le marché intérieur
For oil and meal	...	105,507	200,603	129,861	2,050	45,025	-	Pour huile et farine de poisson
Other use	...	6,011	6,806	2,855	259	-	161	Autres utilisations

SOURCE: For 1938 - FAO Yearbook of Fisheries Statistics - 1947, Table 149; for 1946 and 1947 : Fiskifelag Islands, Aegir, Reykjavik, February 1948; for 1948 and January 1947-49: Special reports from Fiskifelag Islands, Reykjavik.

a/ Eviscerated, heads on, except for herring which is measured in round fresh weight.

b/ Some of the less important species are not included in this table. This total is therefore somewhat smaller then the total found in Iceland's complete statistics for this year.

c/ 1939.

SOURCE : Pour 1938 - Annuaire statistique des pêches - 1947, publié par la FAO, Tableau 149; pour 1946 et 1947 - Fiskifelag Islands, Aegir, Reykjavik, février 1948; pour 1948 et janvier 1947-49 - rapports inédits du Fiskifelag Islands, Reykjavik.

a/ S'entend pour poisson vidé, tête non enlevée, sauf pour le hareng qui est indiqué en poids brut de poisson frais.

b/ Quelques-unes des espèces moins importantes ne sont pas comprises dans ce tableau, ce qui explique pourquoi ce chiffre est inférieur au total indiqué dans les statistiques complètes islandaises pour cette année.

c/ 1939.

TABLE 24. - BOLIVIA: IMPORTS a/

Q - Quantities in metric quintals b/
V - Values in hundreds of bolivianos c/

TABLEAU 24. - BOLIVIE: IMPORTATIONS a/

Q - Quantités en quintaux métriques b/
V - Valeurs en centaines de bolivianos c/

Item		1945	1946	Articles
Fish, dried	Q	388	166	Q Poisson séché
	V	917	322	V
Fish, fresh, pressed, or in brine	Q	1,228	1,160	Q Poisson frais, pressé ou
	V	877	1,161	V en saumure
Fish, preserved	Q	501	2,784	Q Poisson conservé
	V	569	2,834	V
Sardines, in oil or in tomato sauce	Q	3,379	2,730	Q Sardines à l'huile ou
	V	2,621	2,729	V à la tomate

Item		1945	1946	Articles
Anchovies	Q	8	100	Q Anchois
	V	30	366	V
Caviar d/	Q	1	ø	Q Caviar d/
	V	33	1	V
Fish paste	Q	ø	ø	Q Pâte de poisson
	V	ø	1	V
Sponges, natural	Q	ø	ø	Q Eponges brutes
	V	13	6	V
Commercial stearine	Q	1	320	Q Stéarine
	V	2	252	V commerciale

SOURCE: Ministerio de Hacienda, Dirección General de Estadística, Comercio Exterior, 1945 and 1946, La Paz, 1947 and 1948.

a/ Special trade.
b/ Data converted from kilograms; multiplier: 0.01.
c/ C.i.f. values
d/ Including fish roe.

SOURCE : Ministerio de Hacienda, Direccion General de Estadistica, Comercio Exterior, 1945 et 1946, La Paz, 1947 et 1948.

a/ Commerce spécial.
b/ Chiffres exprimés en kilogrammes et convertis en quinteaux en appliquant le coefficient 0,01.
c/ Valeurs c.a.f.
d. Y compris les oeufs de poisson.

TABLE 25. - CHILE: EXPORTS AND IMPORTS *
Five-year averages 1930-44, 1945, and 1946

Q - Quantities in metric quintals a/
V - Values in hundreds of pesos b/

Item exported		EXPORTS - EXPORTATIONS 1930-34	1935-39	1940-44	1945	1946	Articles exportés
TOTAL	Q	1,356	1,677	7,417	17,040	16,822	Q TOTAL
	V	2,139	2,032	17,885	45,604	38,319	V
Fish fresh or frozen	Q	449	537	1,145	1,251	3,446	Q Poisson frais ou
	V	249	286	1,401	2,065	7,948	V congelé
Fish, dried, salted or smoked	Q	303	256	1,345	5,423	7,294	Q Poisson séché, salé
	V	126	104	3,455	12,241	13,590	V ou fumé
Fish, canned	Q	29 c/	33	4,283	9,853	5,580	Q Poisson en conserves
	V	67 c/	37	10,899	28,450	14,692	V stérilisées
Crustaceans and molluscs	Q	368	518	569	453	399	Q Crustacés et
	V	1,398	1,473	1,831	2,544	1,910	V mollusques
Other edible aquatic products	Q	2	6	10	1	ϕ	Q Autres produits
	V	1	6	10	5	8	V aquatiques comestibles
Aquatic mammal products	Q	192	286	31	17	103	Q Produits de mammifères
	V	295	125	80	298	171	V aquatiques
Miscellaneous aquatic products	Q	13	43	34	42	...	Q Divers produits
	V	3	1	9	1	...	V aquatiques

Item imported		IMPORTS - IMPORTATIONS 1930-34	1935-39	1940-44	1945	1946	Articles importés
TOTAL	Q	10,390	4,875	1,981	1,102	1,484	Q TOTAL
	V	16,898	5,958	4,209	5,979	8,103	V
Fish, fresh or frozen d/	Q	-	-	48	...	e/	Q Poisson frais ou
	V	-	-	103	...	e/	V congelé d/
Fish, dried, salted or smoked f/	Q	1,006	822	241	94 g/	114	Q Poisson séché, salé
	V	2,554	942	695	456 g/	420	V ou fumé f/
Fish, canned h/	Q	8,850	3,098	1,429	388	877	Q Poisson en conserves h/
	V	12,900	3,256	1,972	3,215	5,737	V stérilisées
Fish oils	Q	478	815	124	80	455	Q Huiles de poisson
	V	823	774	267	349	1,274	V
Aquatic mammal products	Q	1	1	3	4	3	Q Produits de mammifères
	V	5	6	9	17	5	V aquatiques
Miscellaneous aquatic products	Q	55	139	136	536	35	Q Divers produits
	V	616	980	1,163	1,942	667	V aquatiques

SOURCE: Ministerio de Fomento, Dirección General de Estadística, Comercio Exterior, (annual) 1930-46, Santiago.

* More detailed information has been compiled and will be published in a future issue.

a/ Converted from kilograms; multiplier: 0.01.
b/ F.o.b. values for exports; c.i.f. values for imports.
c/ Including canned crustaceans and molluscs, 1930.
d/ Including oysters fresh.
e/ Negligible quantity of fresh crustaceans and molluscs.
f/ In 1930 and 1942 classified as "dried, smoked or in brine". In 1931 and 1933-40 classified as "fish, crustaceans, and molluscs, dried or smoked". In 1932 listed separately as "fish, dried", "fish, smoked", "fish in brine" and "crustaceans and molluscs, dried".
g/ Including 78 metric quintals of dried shrimp, valued at 33,700 pesos.
h/ Including quantities of crustaceans and

TABLEAU 25. - CHILI: EXPORTATIONS ET IMPORTATIONS *
Moyennes de cinq ans 1930-44, 1945, et 1946

Q - Quantités en quintaux métriques a/
V - Valeurs en centaines de pesos b/

Item exported		EXPORTS - EXPORTATIONS 1930-34	1935-39	1940-44	1945	1946	Articles exportés
TOTAL	Q	1,356	1,677	7,417	17,040	16,822	Q TOTAL
	V	2,139	2,032	17,885	45,604	38,319	V
Fish fresh or frozen	Q	449	537	1,145	1,251	3,446	Q Poisson frais ou
	V	249	286	1,401	2,065	7,948	V congelé
Fish, dried, salted or smoked	Q	303	256	1,345	5,423	7,294	Q Poisson séché, salé
	V	126	104	3,455	12,241	13,590	V ou fumé
Fish, canned	Q	29 c/	33	4,283	9,853	5,580	Q Poisson en conserves
	V	67 c/	37	10,899	28,450	14,692	V stérilisées
Crustaceans and molluscs	Q	368	518	569	453	399	Q Crustacés et
	V	1,398	1,473	1,831	2,544	1,910	V mollusques
Other edible aquatic products	Q	2	6	10	1	ϕ	Q Autres produits
	V	1	6	10	5	8	V aquatiques comestibles
Aquatic mammal products	Q	192	286	31	17	103	Q Produits de mammifères
	V	295	125	80	298	171	V aquatiques
Miscellaneous aquatic products	Q	13	43	34	42	...	Q Divers produits
	V	3	1	9	1	...	V aquatiques

Item imported		IMPORTS - IMPORTATIONS 1930-34	1935-39	1940-44	1945	1946	Articles importés
TOTAL	Q	10,390	4,875	1,981	1,102	1,484	Q TOTAL
	V	16,898	5,958	4,209	5,979	8,103	V
Fish, fresh or frozen d/	Q	-	-	48	...	e/	Q Poisson frais ou
	V	-	-	103	...	e/	V congelé d/
Fish, dried, salted or smoked f/	Q	1,006	822	241	94 g/	114	Q Poisson séché, salé
	V	2,554	942	695	456 g/	420	V ou fumé f/
Fish, canned h/	Q	8,850	3,098	1,429	388	877	Q Poisson en conserves h/
	V	12,900	3,256	1,972	3,215	5,737	V stérilisées
Fish oils	Q	478	815	124	80	455	Q Huiles de poisson
	V	823	774	267	349	1,274	V
Aquatic mammal products	Q	1	1	3	4	3	Q Produits de mammifères
	V	5	6	9	17	5	V aquatiques
Miscellaneous aquatic products	Q	55	139	136	536	35	Q Divers produits
	V	616	980	1,163	1,942	667	V aquatiques

SOURCE : Ministerio de Fomento, Direccion General de Estadistica, Comercio Exterior, (annuel) 1930-46, Santiago.

* Des renseignements plus détaillés ont été recueillis et seront publiés dans un prochain numéro.

a/ Chiffres exprimés en kilogrammes et convertis en quintaux en appliquant le coefficient 0,01.
b/ Valeurs f.o.b. pour les exportations; valeurs c.a.f. pour les importations.
c/ Y compris crustacés et mollusques en conserve, 1930.
d/ Y compris huîtres fraîches.
e/ Quantité négligeable de crustacés et mollusques frais.
f/ En 1930 et 1942 indiqué comme "séché, fumé ou en saumure". En 1931 et 1933-40 indiqués comme "poissons, crustacés et mollusques sechés ou fumés". En 1932, indiqués comme "poisson séché", "poisson, fumé", "poisson en saumure" et "crustacés et mollusques séchés.
g/ Y compris 78 quintaux métriques de crevettes séchées ayant une valeur estimée de 33.700 pesos.
h/ Y compris certaines quantités de crustacés et

TABLE 26. - CHILE: LANDINGS IN CHILE,* Five year averages: 1930-44 and 1945

TABLEAU 26. - CHILI: MISES A TERRE AU CHILI,* Moyennes de cinq ans: 1930-44 et 1945

Species	1930-34	1935-39	1940-44	1945	Espèces
	(.....Metric tons.....Tonnes métriques.....)				
TOTAL	17,635	24,617	38,250	46,991	TOTAL
Flounder	79	134	210	259	Flet
Hake	4,367	7,730	9,801	11,083	Merlus
Allied species of herring	940	2,768	3,989	3,844	Espèces voisines du hareng
Tunas and allied species	1,246	1,453	1,783	4,116	Thons et espèces voisines
Mullets and allied species	749	670	875	681	Mulets et espèces voisines
Jacks and allied species	2,086	3,280	4,494	3,302	Chinchards et espèces voisines
Basses and allied species	912	1,317	1,391	1,287	Bars et espèces voisines
Other teleostean marine species	2,451	3,453	5,547	7,489	Autres espèces téléostéennes marines
Elasmobranch fish	85	299	521	562	Poissons élasmobranches
Crustaceans	488	764	1,743	1,852	Crustacés
Molluscs	3,796	2,241	7,157	11,363	Mollusques
Aquatic fauna	436	507	738	1,153	Faune aquatique

* More detailed information has been compiled and will be published in a future issue.

* Des renseignements plus détaillés ont été recueillis et seront publiés dans un prochain numéro.

TABLE 27. - IRELAND: LANDINGS IN IRELAND by Irish fishing craft, 1938, 1946-48

TABLEAU 27. - IRLANDE: MISES A TERRE EFFECTUEES EN IRLANDE par des bâtiments irlandais armés en pêche 1938, 1946-48

Species	1938	1946	1947	1948 a/	Espèces
	(....Metric tons b/....Tonnes métriques b/....)				
TOTAL c/	11,236	21,215	20,436	20,725	TOTAL c/
Teleostean fresh-water species	...	128	151	...	Espèces téléostéennes d'eau douce
Salmon and allied (marine) species	...	762	783	...	Saumons et espèces voisines marines
Teleostean flatfishes	755	980	966	941	Téléostéens plats
Cod, hake, and allied species	2,298	5,069	4,217	4,217	Morue, merlus et espèces voisines
Herring and allied species	2,888	5,215	6,833	4,022	Hareng et espèces voisines
Mackerel	1,810	3,400	1,944	7,407	Maquereaux
Other teleostean marine species	527	998	1,150	936	Autres espèces téléostéennes marines
Elasmobranch fish	453	901	966	1,025	Poissons élasmobranches
Crustaceans	228	261	224	131	Crustacés
Molluscs d/	2,277	3,501	3,202	2,046	Mollusques d/

SOURCES: For 1938, 1946, and 1947: Department of Agriculture, Fisheries Branch, Report on the Sea and Inland Fisheries, annual, Dublin, The Stationery Office; and communication from Department of Agriculture, Dublin of 18 December 1948. 1948: Department of Agriculture, Fisheries Branch, Landings of Sea Fish, (mimeographed statement), Dublin, December 1948.

a/ Figures subject to revision.
b/ Degree of dressing of fish landed not specified. Data converted from cwts. (112 lb.); multiplier: 0.050802.

c/ The totals for 1938 and 1946 will be higher than the totals in Table 150 of the FAO Yearbook of Fisheries Statistics, 1947, as quantity of molluscs and crustaceans originally given in numbers have now been converted to weight.

SOURCES: Pour 1938, 1946 et 1947 - Ministère de l'Agriculture, Section des pêches, Report on the Sea and Inland Fisheries, publié annuellement à Dublin par The Stationery Office; et communication du Ministère de l'Agriculture, Dublin, en date du 18 décembre 1948. Pour 1948 - Ministère de l'Agriculture, Section des pêches, Landings of Sea Fish (rapport polycopié), Dublin, décembre 1948.

a/ Chiffres sujets à révision.
b/ Le degré de préparation du poisson au moment de la mise à terre n'est pas précisé; chiffres exprimés en "hundredweights" (112 livres anglaises) et convertis en tonnes métriques (coefficient de conversion : 0.050802).
c/ Les totaux pour 1938 et 1946 sont supérieurs aux chiffres correspondants du tableau 150 de l'Annuaire statistique des pêches 1947, publié par la FAO car les mollusques et les crustacés, indiqués premièrement en unités ont été ici évalués en poids.

TABLE 28.- UNITED KINGDOM: LANDINGS IN ENGLAND AND WALES AND IN SCOTLAND by British Fishing Craft - 1938 and 1945-48

TABLEAU 28.- ROYAUME-UNI: MISES A TERRE EFFECTUEES EN ANGLETERRE ET AU PAYS DE GALLES AINSI QU'EN ECOSSE par des bâtiments britanniques armés en pêche, 1938 et 1945-48

Item	1938	1945	1946	1947a/	1948a/	Articles
	(. . .....Metric tons b/ ..... Tonnes métriques b/...)					
Total c/	1,088,086	518,361	939,682	1,032,298	1,081,398	Total c/
Teleostean flat-fishes	58,509	64,409	81,818	76,317	67,763	Téléostéens plats
Cod, hake, and allied species	611,841	264,624	559,455	618,348	611,464	Morue, merlus et espèces voisines
Herring and allied species	282,572	127,595	207,565	229,227	274,856	Hareng et espèces voisines
Mackerel	10,218	3,709	3,171	3,633	8,151	Maquereau
Mullets	68	66	135	144	106	Mulet
Allied species of jacks and pompanos	108	31	113	272	306	Espèces voisines des chinchards et "pompanos" e/
Breams and allied species	7,653	3,799	4,585	10,099	15,606	Brème et espèces voisines
Other teleostean marine species	26,755	11,844	14,124	19,056	23,276	Autres espèces téléostéennes marines
Elasmobranch fish	30,084	15,176	20,467	27,069	29,699	Elasmobranches
Crustaceans and molluscs	25,747	19,051	24,938	22,601	22,388	Crustacés et mollusques
Miscellaneous d/	34,531	8,057	23,311	25,532	27,783	Produits divers d/

SOURCES: For 1938, 1945 and 1946 - FAO Yearbook of Fisheries Statistics - 1947, Tables 166 and 167. For 1947 and 1948, Ministry of Agriculture and Fisheries, Monthly Return of Sea Fisheries, England and Wales (mimeographed statement), December 1948, London, 22 January 1949; and mimeographed statement of the Scottish Home Department, December 1948. Edinburgh, 21 January 1949.

SOURCES: Pour 1938, 1945 et 1946 - Annuaire statistique des pêches - 1947, publié par La FAO, Tableaux 166 et 167. Pour 1947 et 1948 - Ministère de l'Agriculture et des Pêches, Monthly Return of Sea Fisheries, England and Wales (rapport polycopié) pour décembre 1948, Londres, 22 janvier 1949; et rapport polycopié du Scottish Home Department pour décembre 1948, Edimbourg, 21 janvier 1949.

a/ Preliminary data.

b/ These statistics are not converted to round fresh weight; converted from cwts.(112 lbs.); multiplier: 0.050802.

c/ The totals for 1938, 1945, and 1946 are higher than the totals previously published in Fisheries Bulletin, as some of the crustaceans and molluscs, originally reported in number, have been converted to weight.

d/ Miscellaneous products as fish roe, fish oil, and fish livers landed in Scotland are not included.

a/ Données préliminaires.

b/ Ces chiffres ne sont pas convertis en poids brut de poisson frais. Exprimés en "hundredweights" (112 livres anglaises) et convertis en tonnes métriques en appliquant le coefficient 0,050802.

c/ Les totaux pour 1938, 1945 et 1946 sont plus élevés que les totaux publiés antérieurement dans le Bulletin des pêches, certaines quantités de crustacés et de mollusques, indiqués à la source en unités, ayant été converties en tonnes métriques.

d/ Non compris divers produits, tels que rogue, huile et foies de poisson débarqués en Ecosse.

e/ Le nom équivalent en français n'a pas été trouvé.

TECHNOLOGICAL PUBLICATIONS

TECHNOLOGICAL RESEARCH

Short Survey of Research in Fishery Products During the Year 1948... Central Institute for Nutrition Research T.N.O., Utrecht, The Netherlands, 5 January 1948. 3 pp. In English.

A mimeographed list which gives a brief account of research on fishery products at the above-mentioned institute and of its publications on fisheries.

FISHERIES IN GENERAL

Schweizerische Fischkunde. Paul Steinmann... H.R. Sauerländer and Co., Aarau, Switzerland, 1948. 222 pp., illus. In German.

The book deals mainly with biology but at the same time it gives detailed information on fishing methods used in commercial fresh-water fisheries in Switzerland.

. . .

The Cuban Fishing Industry. Joseph L. Martinez. Fishery Leaflet 308... United States Department of the Interior, Fish and Wildlife Service, Washington 25, D. C., March 1948. 67 pp., illus. In English.

Statistics are given on the fishing industry, fish trade, etc., in Cuba and a brief description of them is presented.

. . .

Conférence de la Pêche Maritime, Dakar, 15-22 janvier 1948. Gouvernement général de l'Afrique-Occidentale française, Dakar...Centre National d'Information Economique, 16, Rue de Monceau, Paris 8e, France. 292 pp., illus. In French.

The report contains statements made at a conference on marine fisheries, held in Dakar in 1948, thereby giving a general description of the fisheries, fish resources, and fishing methods in French West Africa. It describes in detail boats and engines in use, the shark industry, and the fish meal and oil industries. It also gives detailed information about projects for freezing of fish, building of fish harbors, and establishment of a school of fisheries. An annex contains notes on the organization of fisheries research in British West Africa.

FISHING AND FISHING GEAR

Modern Angling Bibliography. J. Fitzgerald Hampton...Herbert Jenkins Limited, 3 Duke of York Street, St. James's, London, S.W.1, England, 1947. 99 pp. In English.

Although mostly concerned with fishing as a sport, this bibliography also contains several references of interest on commercial fishing with hook and line.

. . .

Fishing Eels - A Profitable Side Line. L. R. Day. General Series, No. 13...Fisheries Research Board of Canada, Atlantic Biological Station, St. Andrews, N. B., December 1948. 3 pp., illus. In English.

This article describes the most common methods of eel fishing as set-net fishing, pot fishing, and spearing.

. . .

The Research Program of the Albatross III. William F. Royce... U.S. Department of the Interior, Fish and Wildlife Service, Washington 25, D.C., 14 pp. In English.

The paper gives reference to proposed experiments with large mesh trawls.

FACTORY SHIPS

S.S. Pacific Explorer. Part III - Below Deck Arrangements and Refrigeration Equipment. Carl B. Carlson. Fishery Leaflet 316...United States Department of the Interior, Fish and Wildlife Service, Washington 25, D. C., August 1948. 39 pp., illus. In English.

The leaflet gives a detailed description of the refrigeration equipment and the freezing of fish, especially tuna, on board this American factory ship. The freezers are blast and shelf freezers with a total capacity of about 150 tons, the storage compartments containing about 130,000 cubic feet. Suggestions are also presented for construction of tuna-freezing boats.

MISCELLANEOUS PRODUCTS

World Trade in Sponges. A.H. Stuart. Industrial Series No. 82... Government Printing Office, Washington, D.C., 1948. 95 pp. illus. 30 cents. In English.

The different kinds of commercially important sponges are described, together with methods of fishing, preparing, and marketing of sponges. A statistical outline is given regarding the most important areas for sponge fishing; the western Atlantic area (the Gulf of Mexico and the Caribbean Sea), the Mediterranean area, and the Far Eastern area (Japan and the Philippines).

NUTRITION

A Method for Evaluation of the Nutritive Value of a Protein. A Comparison of Broiled and Pan-Fried Striped Bass Fillets. Hugo W. Nilson, William A. Martinek and Dorothy B. Darling. Fishery Leaflet 296...United States Department of the Interior, Fish and Wildlife Service, Washington 25, D.C., July 1948. 15 pp., illus. In English.

It is shown by the growth method proposed here that broiled and pan-fried striped bass fillets possess equal nutritive quality.

FREEZING

Packaging Frozen Fishery Products. S. R. Pottinger. Fishery Leaflet 324... United States Department of the Interior, Fish and Wildlife Service, Washington 25, D. C., November 1948. 10 pp., illus. In English.

Information is given on the weight loss of fillets wrapped in different types of material.

SMOKING

Ondersoek Naar de Bactericide Werking Van Het Palingroken. Dr. C. J. H. Van Den Broek. Publicatie Nr. 72... Centraal Instituut voor Voedingsonderzoek T.N.O., Utrecht, Netherlands, 1948. 119 pp., illus. In Dutch with English summary.

This study began in the Netherlands in 1945 during two paratyphoid epidemics caused by the consumption of infeated smoked eel. The investigation shows that infection of smoked eel by Salmonella paratyphi B organisms can only be brought about by the combination of a great number of factors and therefore is exceptional. Salmonella lying on the surface of the eel will be killed even by insufficient smoking and as Salmonella is not infective to eels it does not penetrate into the organs. Organisms however, can adhere to the knife used for cutting the eel and in this way be buried in the flesh. The investigation shows that just sufficient smoking should eliminate even a maximum contamination in this way.

. . .

Smoking Shrimp. Leo Young. Fishery Leaflet 312...United States Department of the Interior, Fish and Wildlife Service, Washington, D. C., July 1948. 3 pp., illus. In English.

The findings presented here show that color and flavor can be added to cooked shrimp by cold smoking for about 60 to 90 minutes. Also, shrimp smoked in shells retain their flavor and texture. It is proposed to remove heads from raw shrimp.

SALTING AND DRYING

Kan der fremstilles 1'Klasses Saltsild af Nordsøsild? (Salting of North Sea Herring). Meddelelse Nr. 80... Fiskeriministeriets Forsøgslaboratorium, Øster Voldgade 10, Copenhagen K., Denmark, August 1948. 5 pp., illus. In Danish.

This pamphlet is designed to give instructions for fishermen by describing the salting of North Sea herring on board the fishing boats.

. . .

Fremstilling af Klipfisk. (Preparation of dried salted codfish-klipfish). Halvor Petersen. Meddelelse Nr. 79... Fiskeriministeriets Forsøgslaboratorium, Øster Voldgade 10, Copenhagen K., Denmark, June 1948. 10 pp., illus. In Danish.

In addition to giving information on the preparation of dried salted codfish, the publication describes equipment for artificial drying of codfish.

CANNING

Undersøgelse af Helkonserves I. Nogle Undersøgelser af bomberet ikkesur Konserves. (Examination of swells in canned food of the low-acid type.) Ole Møller and Mogens Jul. Meddelelse Nr. 81...Fiskeriministeriets Forsøgslaboratorium, Øster Voldgade 10, Copenhagen K., Denmark, August 1948. 11 pp. In Danish with English summary.

The study shows that it is of value to test both swelled and unswelled cans from the same batch and at least 10 from each group to determine whether the swelling is due to leakage or underprocessing. Both a bacteriological test and an examination of the closure of the cans is important.

. . .

Undersøgelse af Helkonserves II. Undersøgelse af bomberet Helkonserves. (Examination of swelled cans). Ole Møller, Knud Nielsen, Hans Riemann, Erik Ternøe and Mogens Jul. Meddelelse Nr. 82...Fiskeriministeriets Forsøgslaboratorium, Øster Voldgade 10, Copenhagen K., Denmark, August 1948 35 pp., illus. In Danish with English summary.

The factors that may cause swelling of canned products are reviewed. There follows a detailed description of the physical, chemical, and microbiological methods for investigation of swelled cans. Some new and simple apparatus, which is highly accurate for pressure testing of cans is also described.

. . .

Undersøgelse over Pakning af røget Aal i Olie. (Examination of Packing of smoked eel in oil). H. Riemann. Meddelelse Nr. 78...Fiskeriministeriets Forsøgslaboratorium, Øster Voldgade 10, Copenhagen K., Denmark, June-July 1948. 4 pp. In Danish with English summary.

The study shows that smoked eel fillets in oil cannot be sterilized in the normal way, as the taste and consistency will be impaired by the heat. Experiments have demonstrated that a far better keeping quality can be obtained by combining a heat treatment of only 15 minutes at 100°C. with the addition of chemical preservatives.

CRUSTACEANS

The Sping Lobster Industry of the Caribbean and Florida. F. G. Walton Smith. Caribbean Research Council, Caribbean Commission. Fisheries Series No. 3...Guardian Commercial Printery, Port-of-Spain, Trinidad, B.W.I., 1948. 49 pp., illus. In English.

Besides a description of the biology of the spiny lobster, this pamphlet covers the marketing of spiny lobsters and the various types of nets, traps, etc., used in spiny lobster fisheries.

Erratum:

Fisheries Bulletin Vol.II No.1, January 1949

The heading on Table 1 page 2 should read:

LANDINGS BY DANISH FISHING CRAFT, 1938 and 1946-48

Fisheries Division
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
1201 Connecticut Avenue, N. W.
Washington 6, D. C.

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The FAO Fisheries Division will welcome comments and suggestions for this Bulletin.

OTHER FAO FISHERIES PUBLICATIONS

FAO Yearbook of Fisheries Statistics - 1947

Published in Washington, D. C., in August 1948. Price $4.00. Bilingual, English and French, with Preface in Spanish. Photo-offset. 368 pp. Part I of this volume consists of 143 statistical tables on the import and export trade of 61 countries in fish and fisheries products since 1930. Part II contains 86 tables on (a) landings and (b) miscellaneous subjects such as the number of fishermen, craft, etc., for about 20 countries.

OTHER FAO STATISTICAL PUBLICATIONS

Yearbook of Food and Agricultural Statistics - 1948 (in press)

Bilingual, English and French, with Spanish notes.
Photo-offset. xviii + 284 pp.
Price $3.50.
(1947 edition, 280 pp., $2.50 paper bound on $3.00 cloth bound, available).

Yearbook of Forest Products Statistics - 1948

Bilingual, English and French, with Spanish supplement.
Printed. ix + 206 pp.
Price $2.50.
(1947 edition, 212 pp., $2.00, also available).

Monthly Bulletin: Food and Agricultural Statistics

Trilingual, English, French, and Spanish.
Photo-offset. 32 pp.
Price 25 cents.

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